

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 910/9815637	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR99/03066	International filing date (day/month/year) 09 December 1999 (09.12.99)	Priority date (day/month/year) 09 December 1998 (09.12.98)
International Patent Classification (IPC) or national classification and IPC B60T 7/06		
Applicant GIAT INDUSTRIES		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 14 July 2000 (14.07.00)	Date of completion of this report 07 March 2001 (07.03.2001)
Name and mailing address of the IPEA/EP	Authorized officer
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR99/03066

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-22, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☒ the claims, Nos. 1-29, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. _____, filed with the letter of _____,
 Nos. _____, filed with the letter of _____.
- ☒ the drawings, sheets/fig 1/6-6/6, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-29	YES
	Claims		NO
Inventive step (IS)	Claims	3-23	YES
	Claims	1, 2, 24-29	NO
Industrial applicability (IA)	Claims	1-29	YES
	Claims		NO

2. Citations and explanations

Reference is made to the following document:

D1: DE 196 17 372 C

Document D1, which is considered to be the prior art closest to the subject matter of Claim 1, describes (the references between parentheses apply to D1):

A pyrotechnically releasable mechanical coupling device (30) between two mechanical elements capable of being exposed to tensile and/or compressive stress along an axis, said device including at least one pyrotechnic component (50) and at least one locking means (40) mutually coupling said two mechanical elements along at least one axis, said locking means being capable of being released when the mechanical elements are exposed to tensile and/or compressive stress along said axis and being maintained in the locking position thereof by retaining means (44) that are released by the pressure of gases generated by initiation of the pyrotechnic component and include a piston (44) slideable in an axial bore (32) when exposed to the pressure of gases generated by initiation of the pyrotechnic component, said locking

means being in contact with a cylindrical surface of said piston (Figure 2), whereby they are maintained in the locking position thereof.

The subject matter of Claim 1 therefore differs from D1 in that the locking means are in contact with an **outer** cylindrical surface of the piston.

Nevertheless, the feature relating to the "outer cylindrical surface" in Claim 1 is equivalent to the feature relating to the "inner cylindrical surface" described in document D1 and the resulting technical effects are consequently the same.

Moreover, the feature according to which the locking means are in contact with an outer cylindrical surface of said piston whereby they are maintained in the locking position thereof is shown in Figure 3 of document D1. As a result, the use of the feature "outer" rather than "inner" appears to be obvious to a person skilled in the art.

It follows that the subject matter of Claim 1 does not appear to involve an inventive step under the terms of PCT Article 33(3).

Claim 2

In view of Figure 2 of D1, the locking means is considered to be translatably coupled to a first of the mechanical elements when the brake pedal (18) is depressed. For this reason, the features of this claim are considered to be known from D1 and consequently, in combination with Claim 1, do not appear to involve an inventive step under the terms of PCT Article 33(3).

Claims 3 to 11

In so far as Claim 3 can be understood (see Box VIII), the coupling device as per Claim 3 differs from that of D1 in that the locking means includes at least two deformable tips rigidly connected to the first of the elements.

It follows that Claim 3 is novel (PCT Article 33(2)).

The problem which the present invention aims to solve can therefore be considered to be that of providing an alternative way of releasing two mechanical elements.

D1 does not indicate modifying the device thereof in such a manner as to arrive at the device as per Claim 3.

As a result, Claim 3 involves an inventive step (PCT Article 33(3)).

Claims 4 to 11 are dependent on Claim 3 and, as such, therefore also fulfil the requirements of the PCT concerning novelty and inventive step.

Claims 12 to 17

In so far as Claim 12 can be understood (see Box VIII), the coupling device as per this claim differs from that of D1 in that the first of the mechanical elements having the deformable tips mounted thereon includes a threaded portion forming a screw shaft, with the second of the mechanical elements forming a head for said screw.

It follows that Claim 12 is novel (PCT Article 33(2)).

The problem which the present invention aims to solve can therefore be considered to be that of providing an alternative way of releasing two mechanical elements.

D1 does not indicate modifying the device thereof in such a manner as to arrive at the device as per Claim 12.

As a result, Claim 12 involves an inventive step (PCT Article 33(3)).

Claims 13 to 17 are dependent on Claim 12 and, as such, therefore also fulfil the requirements of the PCT concerning novelty and inventive step.

Claims 18 to 23

In so far as Claim 18 can be understood (see Box VIII), the coupling device as per this claim differs from that of D1 in that the locking means includes at least two jaws each having at least one section co-operating with a matching section rigidly connected to the second of the mechanical elements.

It follows that Claim 18 is novel (PCT Article 33(2)).

The problem which the present invention aims to solve can therefore be considered to be that of providing an alternative way of releasing two mechanical elements.

D1 does not indicate modifying the device thereof in such a manner as to arrive at the device as per Claim 18.

As a result, Claim 18 involves an inventive step (PCT

Article 33(3)).

Claims 19 to 23 are dependent on Claim 18 and, as such, therefore also fulfil the requirements of the PCT concerning novelty and inventive step.

Claims 24 to 29

The technical features of Claims 24 to 29 are already known from D1 (Figure 2). As a result, the features of Claims 24 to 29 do not appear to involve an inventive step under the terms of PCT Article 33(3).

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VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to the requirements of PCT Rule 5.1(a)(ii), the description does not indicate the relevant prior art disclosed in document D1, nor does it cite said document.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 2, 3, 12, 18, 21 to 24, 27 and 29 are unclear (PCT Article 6). These claims define the device in terms of the two mechanical elements. It is unclear from Claim 1 that these two mechanical elements form part of the device. - -
2. Claim 1 is unclear (PCT Article 6). In line 9, "at least" one axis is defined, whereas in lines 6 and 12, "an" axis is defined.
3. Claim 3 is unclear (PCT Article 6) for the following reasons:
 - In accordance with Claim 7, the term "a section" should probably read "an outer section".
 - The expression "inner cylindrical bore" is inconsistent with the expression "axial bore" defined in Claim 1.
4. Claim 5 is unclear (PCT Article 6). The expression "cylindrical bore" is inconsistent with the expression "axial bore" defined in Claim 1.
5. Claim 6 is unclear (PCT Article 6). The expression "cylindrical bore" is inconsistent with the expression "axial bore" defined in Claim 1.
6. Claim 7 is unclear (PCT Article 6) for the following reasons:

The expression "cylindrical surface" should probably read "outer cylindrical surface".

 - The expression "first bearing surface" is not

VIII. Certain observations on the international application

defined in Claim 1.

The term "bore" should probably read "axial bore".

- According to Claim 3, the matching section (19) does not form part of the tips.

7. Claim 10 is unclear (PCT Article 6) for the following reasons:

- The expression "cylindrical surface" should probably read "outer cylindrical surface".
- The expression "first bearing surface" is not defined in Claim 1.
- The term "inner bore" should probably read "axial bore".

8. Claim 12 is unclear (PCT Article 6). The deformable tips are not defined in Claim 2.

9. Claim 16 is unclear (PCT Article 6). The term "bore" should probably read "axial bore".

10. Claim 18 is unclear (PCT Article 6) for the following reasons:

- The expression "at least one section" should probably read "at least one outer section".
- The expression "first element" should probably read "first mechanical element".

11. Claim 22 is also unclear (PCT Article 6). According to Figure 6, the pyrotechnic component is rigidly connected to the body (37), not to the first mechanical element.